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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,298

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Virginie Studer

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SOFER & HAROUN LLP.

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EXAMINER

GILLESPIE, BENJAMIN

ART UNIT

PAPER NUMBER

1796

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/528,298	<b>Applicant(s)</b> STUDER ET AL.	
	<b>Examiner</b> BENJAMIN J. GILLESPIE	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11, 12 and 14-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11, 12 and 14-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

*Note*

1. The current office action contains a new ground of rejection, which has been necessitated by applicants' amendment filed 3/4/2009. Said amendment now requires “that said heating reacts said isocyanate function group with said terminal functional group” - support for the newly presented limitation is present in applicants' specification, specifically page 7 lines 5-9; page 8 lines 2-7, 34+; page 9 lines 1-5. Since the previous set of claims filed 9/22/2008 never required that the addition of heat “reacts said isocyanate with said terminal functional group” – it is proper to apply the new grounds of rejection while also making the instant action FINAL.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Obviousness Rejection I**

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3. **Claims 11-12, 15, and 18** is rejected under 35 U.S.C. 103(a) as being unpatentable over of Robertson ('194).

4. **Regarding claim 11:** Robertson teaches a self-lubricating polyurethane coating composition and a method for its production comprising the reaction product of (A) modified polyisocyanate, and (B) base polymer, wherein the resulting coating preferably has superior abrasion resistance (Abstract; col 12 lines 12-16, 26-31). Component (A) is the reaction product triisocyanate, such as isocyanurate and/or biurets, with mono-functional compounds having 10-40 aliphatic carbon atom chains (Col 2 lines 16-25; col 5 lines 27-29, 45; col 6 lines 3-6, 31-65; col 12 lines 25-28). Additional isocyanate-reactive compound may be present which reacts between free isocyanate in the composition, wherein said addition isocyanate-reactive compound consists of diols and diamines (Col 10 lines 50-52).

5. Finally, while it is noted that patentees fail to explicitly teach the addition of heat during the reaction between triisocyanate and mono-functional compounds, it would have been obvious to add heat during said reaction since one having basic skill in the polymer art would understand that the addition of heat facilitates the reaction between isocyanate and isocyanate-reactive groups – this is supported by the examples of Robertson which all add heat during the reaction of isocyanate and isocyanate-reactive compounds.

6. **Regarding claim 12:** The mono-functional compounds having C10-C40 aliphatic chains are fatty alcohols/amines (Col 6 lines 31-65).

7. **Regarding claim 15:** Component B) consists of polyesters and/or polyurethanes (Col 3 lines 21-35; col 4 lines 52-58).

8. **Regarding claim 18:** As discussed in paragraphs 4 and 5, herein incorporated by reference, Robertson teaches a self-lubricating polyurethane coating composition comprising the reaction product of (A) modified polyisocyanate, and (B) base polymer, however patentees fail to explicitly teach additional diisocyanate that has not been modified with mono-functional fatty alcohols/amines.

9. Nevertheless it would have been obvious to add in additional pure diisocyanate monomer based on the disclosure of Robertson on column 11 lines 49-55, which teaches that although diol and diamine act as the chain-extenders, free diisocyanate may also act as a chain-extender, causing cross-links between isocyanate reactive species. Therefore it would have been obvious to add in additional diisocyanate monomer based on the motivation that Robertson discloses it as suitable compound for additional chain-extending in the polyurethane composition and it is *prima facie* obvious to add a known ingredient for its known function; *In re Linder* 173 USPQ 356; *In re Dial et al* 140 USPQ 244. Furthermore, it would have been obvious to combine the additional diisocyanate monomer with the A) compounds, not B), since said monomers contain free NCO groups and would react with any free hydroxyl and/or amino groups; the separation of monomer with B) prevents any premature chain extending.

#### **Obviousness Rejection II**

10. **Claims 14-17, 19, and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over of Robertson ('194) in view of Miyake et al (EP 072,178) and Dunwald et al ('095).

11. **Regarding claims 14, 15, and 16:** As discussed in paragraphs 4 and 5, herein incorporated by reference, Robertson teaches a self-lubricating, *abrasion resistant* polyurethane coating composition comprising the reaction product of (A) modified isocyanate compound and

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(B) isocyanate-reactive base polymer, however, Robertson fails to teach (B) comprising polyamide-imide or an enameled electrical conductor comprising the self-lubricating polyurethane.

12. Miyake et al teach a process for preparing a self-lubricating polyurethane comprising the reaction product of a (A) modified isocyanate compound and (B) isocyanate-reactive base polymer, with the resulting polyurethane being useful as insulatory varnish in enameled electrical conductors (Abstract; page 6). In particular, (A) is the reaction of a polyisocyanate and a mono-functional active hydrogen alkyl compound in the presence of solvent, preferably having more than 21 carbon atoms, wherein the active hydrogen compound consists of hydroxyl, amine, carboxyl, and/or anhydrides (Page 9 lines 20-25; page 10 lines 1-13; page 11 lines 9-25; page 12 lines 1-7, 15-17, examples 1-3). Regarding component (B), patentees teach that selection of materials is based on, among other characteristics, the final coatings ability to withstand mechanical abrasion, and the preferred polymers for component (B) consist of polyesters and/or polyamide-imides (Page 1 lines 7-10, 14-16; page 9 lines 14-18).

13. Therefore, it would have been obvious to include polyamide-imides in component (B) of Robertson, because Miyake et al teach that in addition to polyesters, polyamide-imides are useful in self-lubricating coating compositions that exhibit superior mechanical abrasion resistance, *a property desired by Robertson*.

14. Moreover, it is further reinforced that it would have been obvious to add polyamide-imide polymers in the coating composition of Robertson based on the teaching of Dunwald et al, which discloses coating compositions comprising aromatic polyamide-imides based on hydroxyl,

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carboxyl, amino and isocyanate functional compounds – these coatings exhibit lubricative as well as insulatory properties (Abstract; col 4 lines 34-40).

15. By using polyamide-imide polymers, the resulting coatings have excellent resistance to hydrolysis, high temperature burn out, improved flexibility, and the presence of the amide-imide increases “sliding” within the wire, which is taken to enhance the lubricative properties of the coating composition (Col 1 lines 23-30; col 2 lines 23-39). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include polyamide-imide polymers in Robertson based on Dunwald et al explaining amide-imide polymers provide coatings that have improved mechanical properties, as well as enhanced lubricity – *which is also a desired by Robertson*.

16. **Regarding claim 16:** As discussed in paragraphs 14 and 15, herein incorporated by reference, Robertson in view of Miyake et al and Dunwald et al render obvious a coating composition comprising urethane and polyamide-imide groups – what’s more Dunwald et al teach that suitable polyamide-imide polymers may contain aromatic groups - which is taken to satisfy the claimed “semiaromatic” limitations of claims 16. Therefore, it would have also been obvious to use aromatic polyamide-imide polymers in Robertson since they are disclosed by Dunwald et al as being suitable for resisting mechanical abrasion while also providing lubricity.

17. **Regarding claim 17:** Column 13 lines 63+ of Robertson teach that the final coating composition may be blended with additional polymers that may further enhance the desired properties. Therefore it would have been obvious to also blend polyamide-imide with the final polyurethane since Miyake et al teach they enhance performance properties.

18. **Regarding claims 19 and 20:** As discussed in paragraphs 11-15, herein incorporated by reference, Robertson in view of Miyake et al and Dunwald et al render obvious self-lubricating, abrasion resistant coatings. Additionally, Miyake et al, teach these coatings are also useful in providing an insulating varnish for electrical wires. Consequently, it would have been obvious to utilize the composition of Robertson as an insulatory coating in electrical applications based on the motivation that both Robertson and Miyake et al teach self-lubricating coatings based on modified polyisocyanate and polyester backbone, and in obviousness rejections based on close similarity in chemical structure, the necessary motivation to make a claimed compound and thus the prima facie case of obviousness, rises from the expectation that compounds similar in structure will have similar properties. *In re Gyruik*, 596 F. 2d 1012, 201 USPQ 552 (CCPA 1979).

#### ***Response to Arguments***

19. Applicants arguments filed 3/4/2009 with respect to the rejection of claim 16 under 35 U.S.C. 112 2<sup>nd</sup> paragraph have been fully considered and are persuasive. The rejection has been withdrawn.

20. Applicant's arguments filed 3/4/2009 with respect to the rejection of claims 11, 12, and 15 under 35 U.S.C. 102(b) have been rendered moot in view of the newly present rejection in paragraphs 4 and 5.

21. Applicants arguments filed 3/4/2009 with respect to the rejection of claims 14-16, 17, and 19-20 under 35 U.S.C. 103(a) have been considered but are not persuasive. Specifically, applicants argue that it would not have been obvious to arrive at the claimed composition since Robertson is directed to bowling ball coatings, while Miyake et al and Dunwald et al are directed



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to electrical wire enamel, i.e. the applied references come from non-analogous art and therefore cannot be combined together.

22. In response, while it is true that the references have final applications that differ from one another, the determination that a reference is from a nonanalogous art is twofold. First it is decided if the reference is within the field of the inventor's endeavor. If it is not, then it must be determined whether the reference is reasonably pertinent to the particular problem with which the inventor was involved. *In re Wood*, 202 USPQ 171, 174; *In re Clay*, 23 USPQ2.d 1058.

23. With this understanding, it is noted that the combination of Robertson, Miyake et al and Dunwald et al fail the first test – i.e. different final applications – however, the prior satisfies the second test. Specifically, the secondary teachings of Miyake et al and Dunwald et al show how to improve the desired performance properties of Robertson, i.e. abrasion resistance and enhanced lubricity. Therefore, while Robertson, Miyake et al, and Dunwald et al have different final applications, the combination of references still qualify as analogous art since they are all directed to solving the improving the same properties.

### ***Conclusion***

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

25. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin J. Gillespie whose telephone number is 571-272-2472. The examiner can normally be reached on 8am-5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

27. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Benjamin J Gillespie/  
Examiner, Art Unit 1796

/Vasu Jagannathan/  
Supervisory Patent Examiner, Art Unit 1796